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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,091	02/06/2004	James M. Cobb	BING-1-1054	7148

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EXAMINER	
VON BUHR, MARIA N	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/774,091	COBB ET AL.	
	Examiner	Art Unit	
	M.N. Von Buhr	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 Feb '04, 06 Jul '04 & 30 Dec '05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20040206&20051230*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-51 are pending in this application.

2. Examiner acknowledges receipt of Applicant's information disclosure statements, received 06 February 2004 and 20 December 2005, with accompanying reference copies. These submissions are in compliance with the provisions of 37 CFR §1.97. Accordingly, they have been taken into consideration for this Office action.

3. The replacement sheets for Figures 1-3 were received on 06 July 2004.

4. The drawings are objected to under 37 CFR §1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "transformation matrix" must be shown or the feature(s) canceled from the claim(s). In this regard, although the step of "computing a transformation matrix" is shown in the drawings, a matrix itself is not shown. No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR §1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR §1.121(d). If the changes are not accepted by Examiner, Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The following is a quotation of the second paragraph of 35 U.S.C. §112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which Applicant regards as his invention.

7. Claims 1-51 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In claim 1, the term "improving" is vague and indefinite, since it is deemed to be an indefinite use of a word of degree as a limitation. When a word of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. See *Seattle Box Company, Inc. V. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). In this case, the specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the word of degree. Therefore, one of ordinary skill in the art would not be apprised as to the claimed invention's scope when the claims are read in light of the specification. See *Ex parte Oetiker*, 23 USPQ2d 1641. This also applies to claims 18, 31 and 41.

Further in claim 1, the limitation "improving the comparison between the measurements and the desired position information," is vague and indefinite, since it is unclear what is actually being improved. In other words, the grammar is ambiguous, such that the limitation can be interpreted as requiring that the transformation matrix is somehow used to "improve" either (1) the process used to compare the measurement and desired position information or (2) a result of the comparison. This presents ambiguity with regard to the scope of the claim. This similarly applies to claims 18, 31 and 41, while additionally in claim 18, the "computing" clause is further grammatically awkward, with regard to the "second component." Further in claim 18, there is no clear and proper antecedent basis for "the desired position information of the second component" (emphasis added).

In claim 5, there is no clear and proper functional antecedence for further limiting a step of "measuring at least one of a second surface position and a second plurality of discrete point positions associated with the second component," since no such step was previously provided for. It is noted that a choice of measurements was previously provided for only in relation to the first component.

In claim 8, there is no clear and proper functional antecedence for further limiting a step of "comparing the measured positions of the at least one surface and the plurality of discrete points with a desired position information of the at least one of the first and second components," since no such step was previously provided for, specifically, in relation to the second component. Furthermore, there is no clear and proper antecedent basis for "the at least one surface" nor "the plurality of discrete points," since inconsistent terminology has been used.

In claims 9, 11, 35-37, 41 and 46-48, there is no clear and proper antecedent basis for "the at least one surface" nor "the plurality of discrete points," since inconsistent terminology has been used.

Further in claim 11, and in claims 12, 37 and 48, the terms "acceptably close" and "acceptable" are vague and indefinite, since they are deemed to be indefinite uses of words of degree as a limitation. When a word of degree is used as a limitation, it is necessary to determine whether the specification provides some

standard for measuring that degree. See *Seattle Box Company, Inc. V. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). In this case, the specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the word of degree. Therefore, one of ordinary skill in the art would not be apprised as to the claimed invention's scope when the claims are read in light of the specification. See *Ex parte Oetiker*, 23 USPQ2d 1641.

In claims 13, 14, 38 and 49, there is no clear context for "a corresponding final position," since no "correspondences" have been defined between any of the instantly claimed elements, nor between such elements and any "position" nor "final position."

In claim 15, there is no clear context for "re-measuring the plurality of discrete point positions on said moved ... second components," since no measuring of discrete point positions on the second component (emphasis added) was previously provided for, such that "re-measuring" can occur. This also applies to claims 17, 28 and 30.

In claims 16, 29, 32, 35-40, 43 and 46-51, the limitation is deemed not to be further limiting, because it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. This presents ambiguity with regard to the scope of the claim.

In claims 26 and 27, there is no clear and proper antecedent basis for "the second surface."

Further in claims 31 and 41, the limitations carry no patentable weight, because it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. This presents ambiguity with regard to the scope of the claim.

In claim 42, there is no clear and proper antecedent basis for "the structure."

The remainder of the claims stand rejected as necessarily incorporating the above-noted ambiguities of their parent claims.

8. The following is a quotation of the first paragraph of 35 U.S.C. §112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-51 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in

such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claims 1, 18, 31 and 41, when the ambiguous language noted above, "improving the comparison between the measurements and the desired position information," is interpreted as requiring that the transformation matrix is somehow used to "improve" the process used to compare the measured and desired position information, such a limitation is not supported by the instant written description. The instant specification only appears to provide support for a result of the comparison being "improved" by moving the components in relation to each other as a result of the comparison indicating that a "best-fit" was not accomplished, as described at pages 9-10. In other words, the written description is clear about using the result of comparison to optimize assembly, but is not clear about improving the actual process of comparison.

10. Claims 1-51 are further rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In this regard, as per claims 1, 18, 31 and 41, there is no clear and proper enablement for the "transformation matrix." Although the instant specification does provide support for a step of computing/generating such an entity, no disclosure is actually provided for the "transformation matrix," itself. In other words, there is no description for what such a matrix actually is, how it functions, nor what it accomplishes. In this regard, the matrix is deemed to be an abstract concept, which has not been described in a manner sufficient to enable one skilled in the art to make and/or use the invention.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by Applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by Applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-51 are rejected under 35 U.S.C. §102(e) as being clearly anticipated by Bonse et al. (U.S. Patent Application Publication No. 2006/0107508), which discloses a "method for producing a connection area (4) on a work piece (1), in particular on a vehicle body plate which is to be positioned precisely with

respect to a reference area (8) on the work piece (1). A robot-guided processing tool (9) is used which is permanently connected to a sensor system (13) and forms a tool/sensor combination (16) with it. In a first step, the tool/sensor combination (16) is moved, within the scope of a positioning phase (II), from a proximity position (24) which is independent of the position of the work piece (1) in the working space (23) of the robot (11), into a preliminary position (18) in which the tool/sensor combination (16) is oriented precisely with respect to the reference area (8) of the work piece (1). To move to the preliminary position (18), an iterative closed-loop control process is run through, in the course of which firstly an (actual) measured value of the sensor system (13) is generated and compared with a (setpoint) measured value generated within the scope of a setup phase. A movement vector of the tool/sensor combination (16) is calculated from the difference between the (actual) measured value and (setpoint) measured value using a Jacobi matrix which is calculated within the scope of the setup phase, and the tool/sensor combination (16) is moved by an amount equal to this movement vector. To carry out this positioning task it is possible to dispense with a metric calibration of the tool/sensor combination (16)" (the abstract). See also, at least, paragraphs 1, 2, 4, 5, 14-19, 22, 25 and 26.

As per the claims, in view of the numerous ambiguities addressed above, and in view of the extensive use of alternative language throughout the claims, the claims are deemed to "read-on" the system disclosed by Bonse et al.

13. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. Applicant is advised to carefully review the cited art, as evidence of the state of the art, in preparation for responding to this Office action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M.N. Von Buhr whose telephone number is 571-272-3755. The examiner can normally be reached on M-F (9am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.N. Von Buhr
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Art Unit 2125

MNVB
8/29/06